STATE OF NEW YORK
DEPARTMENT OF STATE
ONE COMMERCE PLAZA
99 WASHINGTON AVENUE
ALBANY, NY 12231-0001
WWW.DOS.NY.GOV

KATHY C. HOCHUL
GOVERNOR

ROBERT J. RODRIGUEZ
SECRETARY OF STATE

DIVISION OF BUILDING STANDARDS AND CODES
September 1, 2020

DOCUMENTATION GUIDELINES
for
FACTORY MANUFACTURED (MODULAR) BUILDING APPROVAL

In order to obtain plan approval pursuant to Section 1209.3 of the Regulations pertaining to Factory Manufactured Buildings {19 NYCRR}, it is the manufacturer's responsibility to provide the required documentation in the form adopted below. The documents consist of plans, specifications, calculations, test results, and/or other documentation which describe in detail the product and manufacturing processes employed to produce factory manufactured (modular) buildings or components. The documents are to include plans/details for site completed portions of the project which require direct interface with the modular completed portions. The documents shall be comprehensively indexed and shall treat the material listed in detail. For the building systems (and/or Individual models) to be evaluated for approval, items including but not limited to the following shall be provided:

(A) General Requirements

(1) All plans, specifications, calculations, and other documentation shall be submitted for initial review with one (1) hard copy and electronic pdf files on a CD-ROM, thumb drive, web transfer or email. Each sheet shall bear the signature and seal of a New York State registered architect or of a professional engineer licensed to practice in New York State. Submission shall be accompanied with the Application and the $50.00 filing fee.

(2) All documents submitted with the application shall be identified to indicate the manufacturer's company name and location and plant name and location if different.

(3) A minimum 3"x 5" clear box must be provided on all full-size drawing sheets and 2" x 3" on reduced sized drawing sheets near the title box for the NYS stamp(s) of approval. Provide the following note in small type along one edge of the box: "Space Reserved for the New York State Stamp of Approval.". Box must be in the same location on each sheet. Box cannot be on left margin.

(4) Manufacturers shall submit drawings showing all elements relating to specific systems on properly identifiable sheets. Drawing scale and sheet size, whether hard copy or electronic, shall be such that they are legible. We reserve the right to request larger size documents if so needed.

(5) Structural connections and connection of systems, equipment, and appliances to be performed on site shall be identified, detailed, and distinguished from work to be performed in the manufacturing facility. Provide a list of all items to be completed on-site by others.

(6) Method of interconnection between factory-manufactured (modular) buildings or components, and location of connections.

(7) Design calculations and/or test reports shall be submitted. The manufacturer shall cross-reference all designs to appropriate calculations and/or test reports. The cover of the Calculations Manual is to be sealed by design professional.

(8) Documents shall indicate where the *Insignia of Approval* will be located.

(9) Cover Sheet for drawings shall include the Client/Owner, Project Name, site address, and County of project, location map, and current building code references. Cover sheet to also include the design professional's contact information, the third-party inspection agency's contact information and the energy testing agency's contact information.

(10) Drawings shall be dated and identified, and include an index which can be used to determine that the package is complete.

(11) Calculations shall be dated and identified, and include an index which can be used to determine that the package is complete.

(12) Drawing Cover Sheet shall provide or show, as appropriate, occupancy or use; square foot areas, building height, and number of stories; type of construction; and structural loads (wind, floor, snow, and seismic), climate zone, FEMA flood zone and Risk Category.

(13) Drawings shall include a Site Plan showing proposed building, adjacent roads, property lines, parking, site features, adjacent buildings and/or structures, distance to adjacent buildings and property lines, utilities, flood plain limits and bodies of water.

(14) Drawings shall show the location of utility connections to the modular portion(s) of the building and required demand at that location. Should include, but not be limited to, electrical, water, fire suppression, waste, and fuel connections.

(15) Drawings shall include a Life Safety Plan that identifies interface of building exits to egress path(s), distance of travel, occupant loads with exiting calculations, and egress widths, rated wall locations, room names and square footage, exit signs and emergency light locations.

(16) Drawings shall include revision dates as they are provided. Any revisions made shall be identified with a revision cloud.

(17) Reference to calculations specific to the design shall be referenced on the title sheet along with date of calculations.

(B) Required Construction Details

Documents for factory-manufactured (modular) buildings or components shall provide or show, as appropriate, the details listed below. Documentation necessary to demonstrate each alternative possible within the system shall be required.

(1) General Building/Architectural

(a) Details and methods of installation of factory-manufactured (modular) buildings or components on foundations and/or to each other including distance separation requirements.

(b) Floor plan(s) and typical elevation(s) with dimensions and notations to satisfy space requirements including but not limited to: minimum room areas, minimum horizontal dimensions, location of space in regard to adjacent finished grade level, minimum ceiling height, building height, grade plane and allowable areas to be considered habitable under sloping roof areas.

(c) Cross sections necessary to identify all major building components and roof types, and details of connections at interface between modules. Identify all fire rated components.

(d) Details of flashing, such as at openings and at penetrations through roofs and subcomponent connections. Indicate flashing material and gauge to be used.

(e) Attic access and attic ventilation, when required by the code. Where attic access is provided, indicate attic floor loading criteria. Demonstrate compliance with natural ventilation requirements and where attic fans are provided, indicate safety controls for attic fans.

(f) For solar energy systems, show access roof limit along with pathways required for smoke ventilation opportunities and to provide emergency access from the roof.

(g) Roof design to show required roof ventilation including vent area.

(h) Exterior wall, roof, and soffit material including, any required rated assemblies.

(i) Interior wall and floor/ceiling material including any required rated assemblies. Show any use of spray foam adhesives, location(s) of use on plans/non-use, product data, and acceptance test reports.

(j) Handicap Accessibility provisions, where applicable.

(k) Sizes, locations, and types of doors and windows. Indicate location, minimum clear opening and operation specifications for Emergency Escape and Rescue Openings. Windows that provide emergency egress shall be identified on the plans. Provide light and ventilation schedule, demonstrating that minimum requirements for each space are satisfied. Include thermal performance specifications for use in energy calculations. Include any safety glazing that may be required.

(l) Suggested foundation plans, vents, and underfloor access.

(m) Details of any elevator or escalator system, including method of emergency operation, when provided.

(n) Any plans that make reference to on-site construction outside the scope of a modular review shall be clearly delineated and shall be identified as requiring review and approval by the local Authority having Jurisdiction.

(2) Fire Safety

(a) Provide location and details of fire rated assemblies, including reference listing or test report for all stairway enclosures, doors, walls, floors, ceiling, partitions, columns, roof, garage separation and other enclosures.

(b) Means of egress, including details of aisles, exits, corridors, passageways, and stairway enclosures. Provide calculations for exit requirements.

(c) Flame spread and smoke developed classification of interior materials.

(d) Location of required draft stops, firestops and fire blocking.

(e) Details of opening protectives in fire resistance rated systems and assemblies. Including reference listings for required door, frame, hardware, borrowed light, or window to complete opening protective specification.

(f) Drawings of fire suppression systems, standpipes, fire alarms, and detection systems, when required. Provide design calculations for fire suppression systems. Provide riser diagrams for suppression systems, fire and smoke detection systems, and fire alarm systems. Provide model information and reference listing for pre-engineered fire suppression systems.

(3) Structural Detail Requirements

(a) Provide engineering analysis to support the selection of all structural members and connections in compliance with applicable codes. Design calculations must; identify reference standard(s) and/or code tables, present design methodology in a step-by-step reviewable format, including all applicable design loads and load paths. Demonstrate compliance with maximum load parameters, alternatively, provide calculations for varying design parameters/varying load conditions.

(b) Details of structural elements, including framing details, spacing, size, connections and fasteners. Provide roof truss design/certification sheets, location of truss insignia on structure and braced wall locations.

(c) Grade, species, and specifications of materials.

(d) Schedule of roof, floor, wind, snow (including drift) and seismic loads upon which design is based. Also where applicable, rain loadings upon a roof shall be taken into consideration.

(e) Column loads and column schedule. Beam/header schedule.

(f) Typical foundation plans, details, and assumed design soil bearing value.

(g) Provide the resulting uniform and concentrated load magnitudes imposed by the modules, for use by the design professional to properly design supporting structure for the modular construction.

(4) Mechanical Detail Requirements

(a) Location, size, and material specifications for all equipment and components including but not limited to: electric heating systems; hydronic heating systems; all air heating, ventilating and air-conditioning systems; appliances, and duct and pipe insulation.

(b) Provide room by room heat loss and design calculations for each typical building. Identify duct work, registers, piping, radiation, etc., to supply the required heating and/ or cooling, to overcome heat loss/and or gain for each space.

(c) Indicate input/output rating and manufacturer's listings requirements of all equipment and appliances, as appropriate.

(d) Method of providing combustion air if required.

(e) Method for providing ventilation air if required, with quantities identified.

(f) Method of providing make-up air if required.

(g) Method of providing exhaust systems if required.

(h) Location of flues, vents, and chimneys; and clearances from air intakes, combustible materials, and other vents, flues and fire dampers.

(i) Demonstrate code compliance for installation of fuel burning equipment, including fireplaces, in confined and non-confined spaces and identify required clearances consistent with the listing. Provide details when necessary.

(5) Plumbing Detail Requirements

(a) Provide fixture count calculations, show location and travel distance to available toilet facilities where new or existing.

(b) Schematic drawing of the plumbing layout, including, but not limited to, size of piping; fittings; traps and vents; cleanouts and valves; for gas, water, and drainage systems.

(c) Plumbing materials and location of all equipment, appliances, and safety controls to be used. Indicate the rating and capacity of equipment and appliances. List or schedule of plumbing materials indicating appropriate compliance standard.

(d) Provide floor plan showing fixtures equipment and connecting piping.

(6) Electrical Detail Requirements

(a) Details of any service equipment provided by the manufacturer.

(b) Method of grounding service equipment.

(c) Load calculations for service and feeders.

(d) Sizes of branch circuit conductors.

(e) Size, rating, and location of main disconnect and over current protective devices.

(f) Location of outlets, junction boxes, fixtures, and appliances. Indicate all required locations of GFCI/arc-fault protected circuitry, and waterproof circuitry. Show compliance with appropriate reference standard for minimum dedicated circuits at kitchen appliance locations and circuitry serving all appliance/motor locations.

(g) A single line diagram of the entire electrical installation.

(h) Indicate all exterior and interior lighting locations. Indicate all required smoke/CO detecting alarm device locations and circuitry. Show occupancy sensors.

(l) Indicate provisions for emergency power generation and connection to required circuitry, where applicable. Show emergency lighting and exit signs.

(7) Energy Conservation Requirements

(a) Provide appropriate climate design zone(s) as applicable.

(b) Provide clear identification of a compliant building thermal envelope by each component, (i.e. exterior wall, window, roof/ceiling, floor or basement wall,

(c) Provide valid scope for compliance documentation as required by the2020 Environmental Conservation Construction Code of New York State (2020 ECCCNYS). Provide methodology of compliance, including tables and/or calculations, and/or performance simulation as required by chosen methodology which will show a clear demonstration of compliance.

(d) Provide details of compliance with all mandatory energy code requirements

(e) Provide equipment efficiencies and control methods.

(f) Provide Mechanical ventilation equipment as required by appropriate code standard.

(g) Provide combustion, ventilation and dilution air for Mechanical equipment as required by the 2020 Residential Code of New York State (2020 RCNYS) for Residential construction or with Chapter 7 of the 2020 Mechanical Code of New York State (2020 MCNYS) for Commercial Construction.

(h) Where compliance is chosen with electronic software provided by USDOE, provide electronic file of model where computer documentation of compliance is provided. Submit REScheck or COMcheck form(s)as sealed by design professional.

(i) **Residential:**

a Provide valid method of compliance documentation as required by the2020 ECCCNYS, Section R401.2 Provide methodology of compliance, including tables and/or calculations which will show a clear demonstration of compliance.

b Provide load calculations of a building's heating and cooling equipment in accordance with ACCA Manual J.

c Provide sizing calculations for heating and cooling equipment in accordance with ACCA Manual S.

d Provide duct sizing calculations in accordance with ACCA Manual D.

e Provide mechanical ventilation requirements of 2020 RCNYS - R303.4, R303.5., R303.6, and M1505.

f Provide notations for the requirements of an ACH 50 test of the completed building shell, after site setup and envelope completion. For Multi-family housing, provide alternative test protocol notations as outlined in the 2020 ECCCNYS.

(j) **Commercial:**

a Provide valid method of compliance documentation as required by the 2020 ECCCNYS Section C401.2 Provide methodology of compliance, including tables and/or calculations which will show a clear demonstration compliance. For exempt buildings, indicate code criteria which allows for the exemption and the design parameters which follow that criteria.

b Provide design load calculations for heating, ventilation and air conditioning in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent computational procedure using the design parameters found in Chapter 3 of the2020 ECCCNYS.

c Provide combustion air (where required) in accordance with the 2020 MCNYS Chapter 7.

d Provide design of duct systems in accordance with the 2020 MCNYS Chapter 6.

e Provide mechanical ventilation in accordance with the 2020 MCNYS Chapter 4

f Provide mechanical systems and service water heating systems commissioning in accordance with requirements of the 2020 ECCCNYS.